

REMARKS

Claims 1-14 are pending in this application. Examiner rejected claims 1-14. In this response, Applicant has amended claims 4, 8 and 14 and responds to Examiner's rejections and objections as follows. No new matter has been added with this amendment.

Claim Objections

Claim 4 has been amended to be dependent on claim 3 so that a "third intermediate layer" is introduced when the parent claim has an intervening "second intermediate layer".

Claim Rejections Under 35 U.S.C. § 103

Claims 1, 3-9, and 11-14

Examiner rejected claims 1, 3-9, and 11-14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2003/0142929 ("Bartur") in view of U.S. Patent No. 5,323,520 ("Peters"). Applicant hereby traverses the rejection as follows.

Bartur does not teach a "transmitter portion arranged on a bottom layer of a multi-layer board," "a receiver portion arranged on the bottom layer of a multi-layer board," or "a high voltage power supply arranged on a top layer of the multi-layer board," as is recited in claim 1. Bartur teaches a "flexible circuit board adapted for mounting the optical module onto a printed circuit board" (Abstract). The flex board couples a single optical component to a printed circuit board, and therefore both a transmitter and a receiver can not be mounted on the same flex board. Further, circuitry mounted on the flexible board is for filtering the power voltage (Abstract).

Bartur discloses a flexible circuit board for mounting individual optical components onto a printed circuit board (Abstract). Examiner refers to paragraph 0049, which teaches that a "single flex board may be employed where a single active optical device such as a transmit laser

diode or receive photodiode is coupled to an optical fiber.” Further, multiple flexible boards are utilized when more than one active optical device is utilized. Therefore, Bartur does not teach both a transmitter and a receiver portion mounted on the bottom of the circuit board, as required by claim 1.

Examiner asserts that reference number 292 of Figure 2c of Bartur discloses the transmitter and receiver portion of claim 1. Reference number 292 refers to discrete circuit components (paragraph 0051) stating:

“Such discrete circuit components may include capacitors and resistors which are coupled to the traces and/or ground plane to provide specific circuit elements such as filters or to set impedance values... These discrete circuit components may alternatively be configured on a separate layer from the traces. Also, these discrete circuit components and in particular the capacitor may couple one or more traces to the ground plane through vias”. (paragraph 0051).

The circuit components of Bartur are clearly different from the transmitter capable of providing signals to a transmitter optical assembly or a receiver capable of receiving signals from a receiver optical assembly or a high voltage power supply of claim 1. Additionally Bartur discloses the inclusion of circuit components on the upper layer (paragraph 0051) while the present invention recites a transmitter and receiver arranged on the bottom layer of a multi-layer board.

Furthermore, the optic assembly of Bartur comprises “a printed circuit board comprising electrical transmitter and/or electrical receiver circuitry” (paragraph 13). This disclosure does not teach or suggest the transmitter and receiver of claim 1 as the transmitter and/or receiver of Bartur transmits or receives electrical, not optical signals.

Additionally, Bartur fails to mention the use of a high-voltage power supply providing a bias voltage for the receiver optical sub assembly on a top layer of a multi-layer board as recited

in claim 1. Rather Bartur discloses that one or more power supply layers may be provided and that such power supply layers would be “separated by insulating layers from the other conductive layers” (paragraph 0051).

Finally, the combination of Bartur and Peters fails to mention a method of isolating a high voltage power supply providing a bias voltage for an optical assembly comprising arranging a high voltage power supply on top of a multi-stack circuit board; and arranging other circuitry on a bottom layer of a multi-stack circuit board and therefore fails to teach or suggest the method of claim 8.

Therefore, neither Bartur nor Peters, alone or in combination, teach or suggest all of the elements of claims 1, 7, 8, and 14 and Applicant respectfully submits that these claims are allowable over these prior art references. Claims 3-6, 9, and 11-13 which depend from claims 1, and 8 are allowable for at least the reasons stated above.

Claims 2 and 10

The Examiner rejected claims 2 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Bartur in view of Peters as applied to the claims above, and further in view of U.S. Patent No. 5,097,393 (“Nelson”). Applicant hereby traverses the rejection as follows.

Claims 2 and 10 are allowable over the combination of Bartur and Peters for at least the reasons stated above. The disclosure of Nelson is specific to power and ground plane arrangements disclosing that “both the power plane (and the ground plane, if desired) can be split into several electrically isolated segments to deliver different power and reference voltages” (column 12, lines 26-29). This fails to teach or suggest the system of claim 2 wherein the transmitter portion and the receiver portion are arranged in a split-ground arrangement.

Therefore, neither Bartur, Peters, nor Nelson alone or in combination, teach or suggest all of the elements of claims 2 and 10 and Applicant respectfully submits that these claims are allowable over these prior art references for at least the reasons stated above.

Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

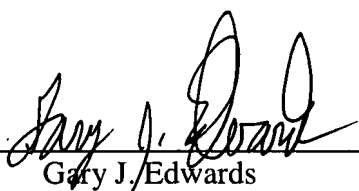
Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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